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Original Articles.

THE MEANING OF THE NORMAL.

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IN medical and dental literature of the present day there is evidently a confusion of ideas as to the meaning of the word normal. In fact the variety of ways in which the word has been employed has resulted in so obscuring its real sense that the idea now conveyed by it, especially in the biological sciences, is not at all clear. One writer uses it as meaning an ideal, a goal to be sought after but never to be found; another interprets it as being synonymous with typical or average; while yet another refers to normal as signifying the natural. Such free and indefinite use of a word is of course wholly unscientific and cannot fail to take away much of its significance. Moreover, the custom of giving the word normal such an indefinite, free, unscientific interpretation reflects a very superficial attitude toward medical and dental problems in general. You will remember that words symbolize ideas. A clear mind will express itself clearly. The form may not be pleasing but the idea will be distinct.

The nature of the structures with which the dentist is concerned, *i.e.*, the teeth and their supporting and surrounding tissues, forces him to a careful analysis of the meaning of the normal. It is even more necessary that he should have a clear conception of the significance of the word than it is in some of the other branches of medicine. This suggests a distinction, a knowledge of which is fundamental in dental science.

Although we know that literally an organism is constituted of parts mutually dependent and essential, it is a matter of common knowledge that in the human organism some parts are more essential to the life of the organism than are others. The small intestine is more essential than the appendix; the muscles of the back are more necessary to survival than are the muscles of the fingers or feet; a man can live longer without teeth than he can without a stomach.

However, to say that one organ or part is more essential to the life of an organism than is another organ or part does not necessarily mean that they are more important in a consideration of the health and development of the organism as a whole. In fact I think it is quite the reverse. The covering of hair, the vermiform appendage, the caecum, the large intestine, and the teeth, while not so necessary to

existence as the heart and small intestine, are more potent sources of disease and disorganizing deformities. Consider the frequency of cancer of the stomach; is it not safe to assume that it is associated with the limited usefulness of this organ? Men can live without teeth, yet it cannot be said that they are useless and harmful. However, the prevalence of dental disease and deformities of the dental arch argues well that the masticatory apparatus is at the present age out of harmony, to a certain extent at least, with the fundamental needs of the race. And it is because of this that the question of its care is a complex one. We should think of the teeth and the dental arch in the evolutionary sense, realizing that we are concerned with a part of the human organism unstable because relatively unessential, important in the consideration of the health and development of the whole individual because of the instability of its organization. In other words, from the fact that the forces of evolution have tended to limit its usefulness in sustaining life, a knowledge of the nature of the masticatory apparatus which is best adapted to its present function in the economy of the whole is more difficult to obtain and is as indispensable as it is difficult.

Thus in the consideration of organs and parts which constitute the more vital units in the organization of the individual the concept of the normal plays a different rôle than in the consideration of those parts which are more remote in their influence and indirect in their effect upon life processes. While a clear conception of the meaning and significance of the normal is necessary in either case, in the consideration of the latter group, the less essential parts, it is a practical necessity. The condition of one of the more essential parts of an organism directly shows itself in the functional activities of every-day life, but the relation of the appendages, accessories, disharmonies, if you will, is often so obscure in the life phenomena of the whole that the condition of their development is not so obvious. Hence the study of such structures is more complex and necessitates a more careful, comprehensive, and analytical consideration of conditions which determine its influence upon the organism as a whole; in a word, its normality.

In most of the textbooks on orthodontia, it has been customary to define "normal occlu-

sion" as "the normal relation of the occlusal inclined planes of the teeth when the jaws are closed." I cannot believe that this definition is satisfactory to anyone. To say of normal occlusion that "it is the normal relation of the occlusal inclined planes of the teeth" does not help us in the least to know what normal occlusion is. We know occlusion to be the transient approximation of tooth surfaces; but what of normal occlusion? One might as well say in describing a brick fireplace that it is a fireplace made of bricks as to say that "normal occlusion is the normal relation of the occlusal inclined planes of the teeth when the jaws are closed" and not at the same time tell what normal is. Knowing what occlusion is, we want to know what particular form of occlusion is designated by the word normal. We know what the dental arch is, but what is a normal dental arch?

The word normal is defined clearly enough in the dictionaries. Webster says that normal is "according to or not deviating from an established norm"; and then defines norm as "a rule or authoritative standard." As used in the organic sciences, normal is "according to, constituting or not deviating from a standard or rule which is observed or claimed to prevail in nature." Normal is not synonymous with natural, the two words do not convey the same idea, they cannot be used interchangeably.

When we enter the realm of biology it seems upon superficial reading that the word normal is used in contradictory ways. Nevertheless, I believe that in many instances the confusion is due to the difference in the nature of the conditions referred to rather than to a different interpretation of the word. The standard to which normal refers depends upon whether the problem is one of species or whether it is a question relative to the individual organism. Please note how Thomas Dwight uses the word normal in a chapter on Variations and Anomalies, as illustrating the former. He says, "There is *normally* in the human shoulder blade a little projection from the lower part of the front border." In another place he says, "There are also anomalies of tissue, in which a certain structure that is usually of one material is made of another, as when what is *normally* a cord is made of a bone or cartilage." I quote again, "Now I found this form of muscle in both arms of the chimpanzee, and Macalister

observed it *once* in the tiger, though it is *normal* to neither." Here as generally in the field of morphology, normal refers to the most usual, *i.e.*, a condition characteristic of a race, group, or species. There are exceptions, but the rule is that the condition prevails. Normal refers to the fact that the conditions, though admitting exceptions, can be taken as a standard. Take, for example, the number of ribs of the individual human organism. The large majority of men possess 12 pairs. This, then, is the *normal* number for man. Yet individuals are known to have eleven or thirteen pairs of ribs. One with thirteen pairs has an *abnormal* number as regards the standard for the species, although individually he may be a perfectly *normal* organism. Hence in morphology normal signifies a standard determined by the constancy, the prevalence, the frequency of the occurrence of a condition in different organisms of a species. For this reason and for the sake of clearness it may be permissible to designate as the species normal this interpretation of the word, since we mean that the individual conforms to the standard for the species.

But when the object of consideration is the relation of an organ or part to the individual organism the standard to which normal refers is of a different kind. For instance, we know that the presence of a stomach is normal for the human being, meaning that the large majority of human beings are in possession of an organ called the stomach which presents many morphological characteristics common to the same organ in the other human beings. But what do we mean by a normal stomach in the sense of its relation to other parts of the organism? A normal individual has two feet which possess characteristics common to the human foot, but what is a normal foot? A normal characteristic of the human being is weight, but what do we mean by the normal weight of a particular individual? So as in the species sense the word normal refers to a standard of numerical frequency, in the individual sense it refers to a standard of a functional nature, a physiological correlation.

A normal stomach, then, in one sense of the word, is one which in function is best adapted to the needs of the individual organism of which it is a part. This is determined by its functional efficiency. The standard is a physiological one. Although a consid-

eration of the size, form and position of the stomach is sometimes necessary in ascertaining the cause of functional difficulties, one does not attempt to measure it or to visualize its form to know whether or not it is normal. The question of the normal is in this instance a physiological one, a standard of functional efficiency in its relation to the life activities of the whole individual organism. In the same sense a foot is normal or abnormal as its functional activities help to maintain or to interfere with the organization of the whole individual. A normal foot is one that functions properly; an abnormal foot is one that does not. (Of course here the word function is used in its broadest sense). Because a foot does not conform in size and shape to a conception one may have of an ideal human foot does not fix it as abnormal for the individual. The concept of the typical form of the foot is utilized as a basis for the consideration of morphological characters, but the condition which determines whether a foot is normal or not is the relation it bears in function to the other parts of the organism. The question is primarily one of physiological correlation. If you would know whether the weight of a child is normal or abnormal, not as compared with other children, but for a particular child, it is a problem of all vital processes and functional activities, local and general. Merely weighing the child is of little value and means nothing unless the weight is correlated with height, vital capacity, physiological age, general form of structure, and metabolic processes. The significance of weight is derived from a study of the vital processes of the whole individual. Thus the normal is in this instance as in those above, one of a physiological correlation. In the *individual* sense the standard referred to by the normal is in the ultimate determined by the life activities of the individual organism as a whole. A part is normal or abnormal to the individual as it affects the organization of that individual.

The same is true of the dental arch and occlusion. When either is considered from the standpoint of morphology alone it is normal or abnormal as it presents the characteristics common to the race, group, or species to which it belongs. From this position the dental arch of man is normal in its development in that it

conforms to a standard of development determined by the observation and comparison of many specimens. Thus in one sense of the word the occlusal relations of the teeth of an individual are normal or abnormal as they are like the condition of occlusion that is characteristic of the majority. Normal is not perfection; it is a standard in actual existence.

In the consideration of the dental arch and occlusion of the teeth in their relation to the individual organism the normal, although referring to phenomena of a different nature, designates a standard as truly as it does in the group or species sense. The standard referred to here not only involves a morphological correlation, but in the ultimate implies a standard of a functional nature. It refers to a condition which is most effective in establishing and maintaining in its most stable form the organization of the living organism.

The observation of the occlusal relations of the teeth of an individual as exemplified in the plaster models, enables one to ascertain in what degree the condition of occlusion approximates the typical. The occlusal relations of the teeth of an individual will never be the same as the typical in all particulars since type is not a fixed point, but an abstraction determined by the extent and direction of individual variations. One may refer to the occlusion of an individual as being normal in the sense that the condition of occlusion comes within the range of variation characteristic of the majority of the members of the group to which the individual belongs. It is normal in the sense that it possesses many of the characteristics expressed as typical.

But in orthodontia we are more directly concerned with occlusion in its relation to the individual organism of which it is a part than with its relation to the occlusal conditions of other individuals. Our problem is to determine in what degree the occlusal relations of the teeth and the form of the dental arch of an individual can vary from that which is characteristic of the group or species and yet be consistent with the needs of the individual organism. Hence in the ultimate the standard to which normal refers to the consideration of occlusion in its relation to the whole individual is a criterion of a functional nature rather than a fixed concept of structural forms and relations. Such an interpretation of the normal involves a study of life processes in general. The collec-

tive or species normal is our basis of study; our guide; our ideal in the consideration of the individual. Yet in view of the facts of variation and heredity the question of the individual normal involves a problem of physiological correlation which designates the individual normal as a standard of a functional nature, determined by the action, reaction, and interaction of the parts and processes in the life activities of the whole individual.

The place of the teeth in the organization of the human being living today makes it imperative that the dentist, and especially the orthodontist, should study the meaning of normal. The conception of the normal dental arch is the foundation of modern dentistry. To assist in establishing and maintaining the normal functional activity of the masticatory apparatus of the living human being is its purpose. Thus the concept of the normal, what it means, what it signifies, is at the very foundation of dentistry, and its careful analysis is a practical necessity to the progress of the science.

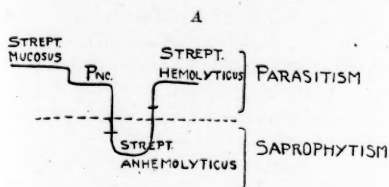
THE CLINICAL BACTERIOLOGY OF THE PNEUMO-STREPTOCOCCUS GROUP.

By D. M. LEWIS, M.D., NEW HAVEN, CONN.

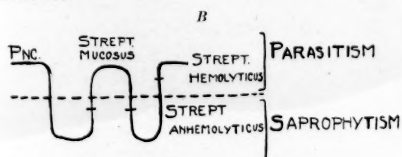
BASED ON standardized laboratory technic of the immediate few years previous to the war, the laboratory statistics of the war period have outlined the immediate necessity of combating streptococcal infections and those especially caused by the hemolytic type. Such work is naturally being directed along the lines which previously established the so-called fixed types of pneumococci, biological differentiation showing numerous types of the hemolytic streptococcus. Like all other problems of infection, the possible perspective of this group of bacteria from another viewpoint than that of the laboratory only, has been accentuated to such an extent that to one who has been following field work extensively it is most appealing. Appealing from two viewpoints—the one, that medical bacteriology of this group of bacteria especially is not as complex as the laboratory tends to make it, and secondly, the closer collaboration of bacteriology for the solution of the problems of epidemiology.

If we review the main facts as acknowledged at the present time the various phases of the

group may well be illustrated by the following illustration.¹ From morphology and capsule



characteristics, colony appearance on blood agar and bile solubility, the four varieties are generally held to be easily distinguishable—the streptococcus mucosus nearest the pneumococcus by virtue of capsule and bile solubility; the anhemolytic streptococcus and the hemolytic differentiated only by the presence or absence of hemolysis on sugar-free blood agar. Under differentiation of pneumococci it is held that types 1 and 2 are fixed, infection occurring from without, while 3 and 4 are normal inhabitants, and autogenic infection occurs from breaking down the barriers. Similarly under the streptococci the anhemolytic is the normal inhabitant and until recently never found in the blood stream apart from the bacteremia of cardiac infections, while the hemolytic type was rarely found in the normal individual. The latter holding true for the streptococcus mucosus, I believe the previous illustration would be better expressed as follows:



Examining civil statistics as lately shown,² the following points I would emphasize: the low per cent. of lobar pneumonias normally from type 4 in adults, 20-25%; the varying mortality of different years, 5% in 1914 and 25% in 1916; the high per cent. of the type in children, as high as 74%; the similar findings for post-operative pneumonias and common colds. In the terms of the laboratory, types 1 and 2 cause the predominant lobar pneumonias of adults, whereas type 4 predominates in the pneumonias of infants and children, and the mortality of types 1 and 2 is lower in the lat-

ter ages than in adults. Examining the war camp statistics there are notable examples of the almost pure type 4 broncho-pneumonias and a mortality exceeding that previously known in infants and children, whereas in other camps the combination of demonstrated per cent. of normal carriers, as well as the time of the epidemic, showed that this type was not the infecting organisms causing death. Thus at Funston, in "flu" cases without pneumonia, there was an incidence of type 4 of 57 per cent. with streptococci of 10 per cent., of recovered pneumonias 60 and 10 respectively, and that of fatal pneumonias of 60 and 8 respectively; at Custer the reverse approximate percentages of these organisms held. At Sherman a picture similar to Funston and corroborative per cent. of normal carriers of type 4 as contrasted to a similar incidence for the streptococcus hemolyticus. It is possible to correlate the high incidence of the type 4 in civil life in children and the war as contrasted with the statistics of pneumonias of adults in civil life: those of children were taken during 1915-1916 when we had over the whole country a "grippe" epidemic, while the adults were taken during 1913-1914. It is possible then to correlate also the abnormal incidence in terms of abnormal incidence of carriers in both instances, thereby questioning the autogenic theory of infection by this type and placing it in the same category as the first two types. There remains then the fact of discrepancy of mortality. As one possible of lesser virulence during interim years the low one recorded in adults in civil life holds true to form. Wherein lies the difference between a type 4 that is found in the blood stream during the course of pneumonia, the high frequency invader of cases without pneumonia and of carriers as opposed to the same type at another camp where it was never found in the blood stream ante-mortem. There is one possibility—are we generally dealing with the streptococcus mucosus, whose colony characteristic simulates the pneumococcus?

If now we examine the statistics of the streptococci as related to previous civil life, there is prominent the importance of the hemolytic streptococcus as causative of septic sore throat while during the war a yet further prominence that, as the causative factor in the mortality of broncho-pneumonia, of measles, German measles, scarlet fever, and influenza, the

varying pathological appearances of those pneumonias were notable. Whereas the lobar pneumonia of the fixed types was similar, the broncho-pneumonias of hemolytic streptococci were different. While there was the proportionate high incidence of healthy carriers at the time of high incidence in those camps with high frequency of infections due to that organism and the return of both to normal after the epidemic was over, there are some discrepancies besides that of the differing pathology of the pneumonia to be explained. At Custer at the same time that 75 per cent. of the healthy carriers showed the organism, sputum and throat cultures of influenza patients both with and without pneumonia showed double the per cent. of non-hemolytic streptococci while the lungs at post-mortem showed the reverse and ante-mortem blood cultures the hemolytic only. Further, that where but 11 of 510 such cultures were positive, that of the last 80 cultures seven were positive. Yet again where non-hemolytic were only present in sputum and cultures, the hemolytic type was later found in the pleural exudate. In another camp, in 77 cases of fatal "flu" pneumonia and 163 cases with recovery, the hemolytic streptococcus was not found in the sputum, yet post-mortem in 41 per cent. of those fatal cases tissue cultures and empyema fluids showed that organism. Suggestive is the fact that where one watches the appearances of the hemolysis on plates from the same case that, as the case progresses toward convalescence, there is increasingly shown a division of such hemolytic colonies originally with purely wide zone hemolysis into three types, called by some a, b, and c, in accord with the decreasing size of the zone. And progressively there also appears increasing numbers of the non-hemolytic type. In some such cases with the sudden appearance of some complication like an otitis media, throat cultures again give pure cultures, or approximately such, of wide zone hemolytic type. There is also to be remarked the known previous fact that occasionally an organism found causing hemolysis in homologous blood does not cause hemolysis in heterologous blood.

In support of these apparent discrepancies as to the fixedness of these various types of

streptococci the following quoted sentence represents the accepted laboratory status of the situation previous to the war: "We believe that mutations occur in nature—that they occur uncommonly and that their occurrence is not of sufficient frequency to interfere with current bacteriological methods or with the practical application of those methods to clinical medicine." The widest extreme that is classical is the isolation of a pneumococcus from an endocarditis which settled down to the later laboratory life of a hemolytic streptococcus. There is acknowledged then the possibility that the duration of activity of its life in the human body determines the "fixedness" of type of these organisms. Two other possible factors have had no investigation: growing fresh cultures from the human body on media simulating as closely as possible the chemical abnormalities that are taking place in the body at the time that such organisms are obtained; and secondly, the study of that organism as obtained from the carrier contact who infected the case as to whether he may not be the cause for variations in what would otherwise be fixed. In both there is open for consideration a factor which has had no practical application, namely, the influence of symbiosis of other organisms present in the case and in the carrier. It is conceivable that the hemolytic streptococcus studied from that standpoint would reveal the differences manifest in measles, scarlet fever, influenza, and septic sore throat. I am convinced that such studies would reveal the epidemiological dependency of such widely divergent clinical manifestations as the occurrence published of a pure septic sore throat epidemic following streptococcal influenza respiratory manifestations at the Chelsea Hospital as related by Keegan³. The apparent simplicity of interdependence of respiratory disease frequencies would be explained by and correlated with a similar bacteriological simplicity. The further possibility of explaining the etiology of some unknown diseases is apparent; may not a hemolytic streptococcus resident in a scarlet fever carrier be so modified as to be the cause at that time of the disease at the same time that a full brother of that organism through a similar selective residence is being

fixed for transfer of measles or septic sore throat? Epidemiological investigations have shown that such may be a logical explanation.

SUMMARY.

Bacteriological study of the pneumostreptococcus group in terms of fixation of type through growth in abnormal chemical and symbiotic relations of both carrier and case present opportunities for the explanation of many dominant problems of the present; rationalizing the discrepancies of laboratory and epidemiology and simplifying both branches of science comprise the larger of such problems.

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- ¹ Aschner: Jour. Infectious Diseases, 1917, Vol. xxi.
- ² Bernton: Recent Classification and Treatment of Pneumonia, Fiske Fund Prize Essay, No. lviii.
- ³ Keegan: Hospital Epidemic of Septic Sore Throat, etc., Jour. A. M. A., May 17, 1919.

NOTES ON THE USE OF THE PORTABLE RESPIRATION APPARATUS.

BY FRANCIS G. BENEDICT, BOSTON.

[From the Nutrition Laboratory of the Carnegie Institution of Washington, Boston.]

THE clinical study of the respiratory exchange has been necessarily limited, owing to the extraordinarily complicated technique and rather expensive laboratory equipment heretofore needed. As a result of extended investigations on the metabolism of normal individuals, a form of apparatus has been developed in the Nutrition Laboratory which has been described in this JOURNAL as the "portable respiration apparatus."¹ This apparatus, which is designed to do away with weighings and exact gas analysis, has been rather rapidly taken up by a number of clinicians in studying pathological cases, particularly hyperthyroidism.

The original apparatus was constructed by Mr. W. E. Collins, the mechanician of the Nutrition Laboratory, and several models were used in connection with the investigation on the influence of restricted diet upon the metabolism of 25 young men.² At the conclusion of this research, four of these were sold at the cost of manufacture. The apparatus has never been and will not be patented; any instrument maker may therefore copy it. Since a large number of requests have come to this laboratory for the apparatus, we have turned them over to

a local manufacturer, without assuming any responsibility whatever for his workmanship or accuracy. At present, he is the only one constructing the apparatus and his productions, so far as we know, have been satisfactory.

One of the main objects in the development of the portable respiration apparatus was to do away with the work of the lungs in actuating valves and forcing expired air through air purifiers. Consequently an electric blower was inserted in the circuit and this blower, after a great deal of experimental work, has been adopted as a permanent part of the equipment. It consists of a small hair drier, usually obtainable on the market. These hair driers, normally rated as taking 0.3 ampere,* actually require 0.65 ampere for starting and after running a moment, 0.5 ampere. As ordinarily supplied, they are designed for use with a 110-volt current and obviously will not stand a higher voltage.

It should be stated that seven of these apparatus were used daily for nearly four months, four of them being simultaneously used by one assistant, and three by another assistant, and but one blower was destroyed. The blower is so constructed that it may be started by an electric switch and stopped by the same method, *but it must be oiled and given reasonable care.* Recently several users of the apparatus have reported that the electric equipment of the apparatus has burned out. It seems wise, therefore, to analyze these difficulties and, if possible, to suggest a remedy. In one case, a 220-volt current was turned on to the 110-volt motor!! Usually the difficulty has been due to the fact that the motor has stopped for want of oiling or for some other cause and, after a short time, the heating effect in the armature has built up to such an extent that the insulation breaks down, combustion takes place, and the motor burns out. This is particularly unfortunate as one of the prerequisites of the apparatus is that the air inside the ventilating circuit should be somewhat rich in oxygen; under these conditions a lively combustion is liable to follow.

It has been pointed out by one user of the apparatus that it is not impossible that when such combustion takes place, the smoke and fumes might be driven through the ventilating system to the lungs of the subject. With this

* Erroneously stamped by the manufacturer as 3 amperes.

point we are inclined to disagree, for when the motor takes fire and burns out, causing fumes, there is no further means of driving the ventilating air current around to the lungs of the subject. In the remote contingency that ventilation may continue for a few seconds, it should be noted that the soda-lime bottle would act as a fairly efficient "scrubber" for removing the smoke. "Rebreathing" of air with the smoke admixture is not, however, impossible.

It should be emphasized that the apparatus was not described until it had undergone very severe tests as outlined above. If, when the operator hears the blower stop, he turns the switch and 3-way valve immediately, we do not see how there can be any danger. If the current is allowed to flow through the instrument when the blower has stopped, a burn-out is inevitable.

Attention should be called to the fact that by a very simple adaptation, a positive blower, directly attached to the armature shaft of a $\frac{1}{8}$ h.p. motor and mounted on the base of the apparatus, can be easily adjusted to provide sufficient ventilation and do away with the hair drier. By connecting the intake side of the blower with the spirometer, and connecting the discharge directly with the soda-lime bottle, a rapid circulation can readily be obtained. One-eighth inch piping suffices for this purpose. We have connected such an arrangement to one of our laboratory apparatus and have obtained satisfactory results.* Such a change in the apparatus adds appreciably to the cost and weight, and we believe it to be unnecessary, hence we have not used it in our experimental work.

Bells made of thin sheet aluminum (0.005 in.) were originally employed. We have still no reason to think that a better material for the purpose has been found. One objection to the aluminum is that when immersed in water and allowed to remain for any length of time, it is liable to become somewhat pitted. To prevent this, we have in our own apparatus occasionally em-

ployed a thin oil in place of water. Obviously a combustion inside the bell, with an oxygen-rich atmosphere and with an oil bath, would have serious results. Consequently, we strongly recommend that water alone should be used. By removing the bell at the end of the day and drying it gently with filter paper or cheesecloth, the pitting may be long delayed. The blower should also be removed, any adhering water dried off, and the bearings oiled. Before replacing the bell at the beginning of the next day's experimenting, the motor should be run a moment or two.

Apprehension has been expressed by some users of the apparatus that the more recent procedure of employing only a soda-lime bottle instead of a train consisting of a calcium chloride bottle, followed by a soda-lime bottle, and a second calcium chloride bottle, may give rise to errors, inasmuch as the moisture in the soda-lime bottle may be sufficient to affect the method of calculation. By reference to the original description of the apparatus,³ it will be seen that theoretically this error has been recognized. When the calcium chloride bottles are discarded, the air is then dried over soda lime rather than over calcium chloride. Although the large amount of moisture expired from the lungs of the subject is directly discharged into the bell before it reaches any form of water absorbent, the total volume of expired air, when diluted by the continuous supply of air in the apparatus, gives a very low humidity. This has been proved by repeated tests with a psychrometer in the connections between the mouthpiece and the spirometer bell. When soda lime is substituted for the calcium chloride, we have to do simply with the difference in drying power of the two reagents. Undoubtedly calcium chloride will absorb a greater proportion of water than soda lime. In this laboratory we have had considerable experience in collecting the water given off by soda lime in passing dry air over it, as this is one of the procedures with respiration apparatus regularly in use here. An approximate computation shows that about 10 grams of water are absorbed from about 12,000 liters of air. Since one cubic meter of air saturated at 20° C. has about 17 grams of water vapor in it, it can be seen that the air leaving the soda lime is only about 5% saturated. A simple calcula-

* A combination blower and motor is the Cenco Rotary Blower and Vacuum Pump combined, No. 1400, supplied by the Central Scientific Company, Chicago, Ill. It consists of a blower with a $\frac{1}{8}$ h. p. direct connected motor, mounted on a cast iron base. This combination suffices to circulate about 35 liters of air per minute through the apparatus and hence may be cut down by resistance, if desired. The motor is preferably started through a small rheostat. At the low air pressures obtaining inside of the portable respiration apparatus, no leakage through the movable parts of the blower is to be expected.

In case a rotary blower is installed on the apparatus, a test of the whole apparatus for leakage should be made with the blower running. With no temperature change there should be no change in the height of the bell during 15 minutes. Each degree Centigrade rise or fall produces an increase or decrease of about 2 mm., i. e., $\frac{1}{273}$ of the air volume, which is about 10 liters with one soda lime bottle in the circuit.

tion will show that this has but little appreciable effect, *with the Emmes modified method*,* in reading the spirometer of the portable apparatus.

Finally, attention should be called to the fact that this laboratory has at no place or time recommended the portable apparatus for the diagnosis of or as an index of treatment for any specific disease. In fact, like most new instruments, we fear it is liable to very considerable misuse. The basis of much of this misuse may readily be the proneness of medical men to fix in their minds the picture of an inflexible normal value for adults and, in comparing the measured oxygen with the preconceived value, to misinterpret the results obtained. Attention should be called to the fact that in the recent report of the studies with 17 unpracticed subjects by Hendry, Carpenter, and Emmes,⁴ two showed a metabolism 14 or more per cent. below "normal" and one a metabolism 11.5 per cent. above "normal," and in the study of 12 normal young men in the low-diet investigation at Springfield, one showed a metabolism 14.3 per cent. above the so-called normal.

From a biometric analysis of metabolism values for 136 men and 103 women, Harris and Benedict⁵ have derived a prediction formula to indicate the most probable metabolism of individuals based upon the fact that *sex, age, weight, and height all have an independent influence upon basal metabolism*. This formula is:

For men:

$$h = 66.473 + 13.752 w + 5.003 s - 6.755 a$$

For women:

$$h = 655.096 + 9.563 w + 1.850 s - 4.676 a$$

in which h = daily heat production, w = body-weight in kilograms, s = stature in centimeters, and a = age in years. Thus, for computing the most probable metabolism of a man weighing 70.5 kilograms, with a height of 172 centimeters, and 29 years of age, the following computation would be made:

$$h = 66.473 + (13.752 \times 70.5) + (5.003 \times 172) - (6.755 \times 29) = 1701 \text{ cal.}$$

* This method is strongly to be recommended over the original, with its unnecessary complications. See original paper: Benedict, BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxxviii, 1918, p. 678.

To simplify the use of these equations, a series of tables has been prepared, by which the most probable metabolism of a man or woman may be obtained by simply adding together the entry for body-weight in one table and that for stature and age in a second table.⁶ As is inevitably the case with all biological data, the original data upon which these equations were based had wide variations and hence it is erroneous to maintain that any given individual will show a metabolism exactly in accord with the computations from this formula. Clinicians should therefore be on their guard against ascribing too great significance to either a plus or minus variation from the so-called normal in any given individual case. For physiological purposes, the effect of any superimposed factor, such as diet or work, may adequately be studied only by the use of several subjects. Certain diseases, particularly hyperthyroidism, are characterized by profound increases in basal metabolism. That any particular patient showing a metabolism more than 10 per cent. above "normal" or 10 per cent. below "normal" (the at present commonly accepted limits of clinicians) should be considered on this evidence alone as a pathological case, we strongly disagree. Since in this laboratory we usually deal with normal conditions only, under which conditions the influences upon the metabolism are rather slight, deductions can only be made from a relatively large number of experiments with several subjects. *There is no inflexible standard for normal metabolism for any given age, weight, height, and sex, from which all normal individuals never vary.*

REFERENCES.

- ¹ Benedict: BOSTON MEDICAL AND SURGICAL JOURNAL, 1918, clxxviii, p. 667.
- ² Benedict, Miles, Roth, and Smith: Carnegie Inst. Wash. Pub. No. 280, 1919.
- ³ Benedict: BOSTON MEDICAL AND SURGICAL JOURNAL, 1918, clxxviii, p. 675, footnote.
- ⁴ Hendry, Carpenter, and Emmes: BOSTON MEDICAL AND SURGICAL JOURNAL, 1919, clxxi, pp. 285, 334, and 368.
- ⁵ Harris and Benedict: Biometric Standards for Energy Requirements in Human Nutrition, The Scientific Monthly, 1919, 8, p. 385. In the equation for women, on page 397, attention should be called to a typographical error in that the first figure should be read 655.096 instead of 665.096. On the same page there is a second typographical error in the first application of the equation for men in that the first figure in the calculation for the heat production should be 66.473 instead of 66.973.
- ⁶ See Harris and Benedict: A Biometric Study of Basal Metabolism in Man, Carnegie Inst. Wash. Pub. No. 279, 1919, especially Appendix, pp. 261-266. This publication can be purchased from the Carnegie Institution of Washington, Washington, D. C., at the cost of printing, namely, \$4.00. All communications regarding the purchase of this monograph should be addressed to the Carnegie Institution of Washington and not to the Nutrition Laboratory.

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THE BOSTON MEDICAL AND SURGICAL JOURNAL.

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VACCINATION LEGISLATION.

THE evidence of the efficiency of vaccination in preventing smallpox is so overwhelming that it is not easy to realize the obligation upon the medical profession to keep presenting this evidence in order to offset in the minds of our Legislators the pleadings of the anti-vaccinationists. This year it seems highly necessary to make sure that our Senators and Representatives shall be furnished with the facts.

In this State, where for so many years there has been so little of the disease, it is not easy to prove that our immunity has been due to compulsory vaccination. The terrible scourges of a century ago have been forgotten. It is even doubted by some if there really is any such disease. And, if there is such a disease, many doubt if there is any connection between its practical disappearance and the practice of vaccination.

In other communities, where the smallpox has until lately been prevalent and where after general vaccination it has disappeared, it is easier to prove the case. For instance, in the Public Health Reports No. 57 of the Public Health and Marine-Hospital Service of the United States there is an article by Dr. Victor G. Heiser, formerly Director of Health for the Philippine Islands and Dr. Robert Oleson upon the Smallpox and Vaccination which gives facts that ought to be more generally known. This seems to be a fitting time to present the following extracts from the Report, which was originally published in 1911.

ALFRED WORCESTER, M.D.,

President of the Massachusetts Medical Society.

"At probably no time in the world's history has the efficiency of vaccination as a preventive for smallpox been so conclusively and effectively demonstrated as in the Philippine Islands since American occupation.

The evidence of its value is incontestable.

During Spanish times it was necessary each year during the dry season to erect in Manila a large temporary hospital to which the many hundreds of victims of smallpox could be taken. The great majority of them died.

During the past five years not one person has died in Manila from smallpox who had been successfully vaccinated during the five previous years; nor has anyone died of smallpox in Manila since June, 1909.

Since 1907, when the systematic vaccination was completed of the six Provinces near Manila, which have an approximate population of 1,000,000, and which from time immemorial had an annual average mortality from smallpox of at least 6,000 persons, not one person has died of smallpox who had been successfully vaccinated, and only a few scattering cases have occurred. During the past two years some deaths have been reported, but careful investigation shows that not one death took place in a vaccinated person.

In May, 1904, the United States Army transport, *Lisicum*, left Manila with 26 cabin passengers, 170 steerage passengers, 16 officers, and 80 members of crew, or a total of 292 souls on board. During the first week smallpox broke out aboard the vessel in an unvaccinated child in the steerage. An examination of the personnel on board showed that three members had never been vaccinated. Within a period of two weeks these unvaccinated persons were stricken with the disease and not one of the 280 remaining persons contracted it.

* * * * *

An accurate estimate of the prevalence of smallpox in the Philippine Islands under the Spanish régime is not available, but judging from the partial reports received from the provinces during the first few years of American occupation the death rate must have been appallingly heavy.

The policy of persistent systematic vaccination, inaugurated 12 years ago by the American sanitary authorities, has been attended with excellent results.

In the larger cities and easily accessible localities the disease has become mild, relatively infrequent, and death is rare. Severe outbreaks of variola are occasionally reported in some of the remote communities. In these instances, however, it has invariably been found that vaccination has been in-

complete. Either it has been impossible to plan a potent virus in the field for vaccination, or the people, through ignorance, superstition, or wilful neglect, have failed to avail themselves of the proven prophylactic advantages of the measure.

In order that the efficiency of protective inoculation may be illustrated, a few of the many successes which have attended the efforts of the bureau of health for the Philippines are here cited.

* * * * *

In Pampanga Province there were 278 deaths from smallpox in 1904 and 168 in 1905. After vaccination was begun with some degree of regularity the decrease in the ravages of the disease became manifest: 1906, 35 deaths; 1907, 14 deaths; later, to date, no deaths.

During the systematic vaccination of the Province of Albay, with a population of 234,000, bitter opposition was encountered in the towns of Tabaco and Malinao. Many people remained away from the towns until after the departure of the vaccinators. The following year 40 deaths from variola occurred in these two localities, the only cases in the entire Province. The authorities suppressed the disease by enforced vaccination of those who had previously escaped and since then there has been no smallpox in the Province.

In January, 1910, the district health officer of Ilocos Sur was summoned to the town of San Esteban to aid in combating an epidemic of smallpox. The work of thorough vaccination began on January 26, after the great majority of cases had developed. The beneficial results were immediately apparent as shown by the following enumeration of cases:

January, 1910	126 cases	29 deaths
February, 1910	75 cases	22 deaths
March, 1910	10 cases	6 deaths
April, 1910	1 case	1 death

Subsequently there were no cases. Of the 58 persons who succumbed to smallpox, not one had a vaccination scar, nor did any of the 154 survivors have scars denoting recent successful vaccination. The instance is particularly noteworthy because attention was directed solely to vaccination. The epidemic occurred in the dry season, climatic and sanitary conditions remaining the same.

That portion of the Province of La Union lying north of the town of San Juan was systematically vaccinated in 1905, with the resulting disappearance of smallpox. In the unvaccinated southern part of the Province there were yearly outbreaks even while the northern portion remained free from the disease. Following systematic vaccination, variola was also eradicated from the southern portion, a phenomenon commented upon by the impressionable people with amazement.

* * * * *

Prior to 1905 between 3,000 and 4,000 deaths from smallpox were reported each year in the Province of Cebu. In 1905 and 1906 the systematic vaccination of the 650,000 inhabitants was undertaken. In 1907 there were only 94 deaths, and in 1908, 84 deaths from the disease.

As smallpox was apparently on the wane, vaccination was suspended for two years. In the meanwhile there was a decided increase in the number of unprotected people, due to births and immigration from neighboring islands. During 1909 there was a recrudescence of variola, in which 736 persons lost their lives. Investigation proved that over 90 per cent. of all the cases were among unvaccinated children, that no cases were reported among persons recently successfully vaccinated, and that the small number of adults attacked were nearly all unvaccinated. The Province has again been thoroughly vaccinated."

MEDICAL NOTES.

GIFT OF THE CARNEGIE CORPORATION OF NEW YORK.—The Carnegie Corporation of New York has announced its purpose to give \$5,000,000 for the use of the National Academy of Sciences and the National Research Council. It is understood that a portion of the money will be used to erect in Washington a home of suitable architectural dignity for the two beneficiary organizations. The remainder will be placed in the hands of the Academy, which enjoys a federal charter, to be used as a permanent endowment for the National Research Council. This impressive gift is a fitting supplement to Mr. Carnegie's great contributions to science and industry.

The Council is a democratic organization based upon some forty of the great scientific and engineering societies of the country, which elect delegates to its constituent Divisions. It is not supported or controlled by the government, differing in this respect from other similar organizations established since the beginning of the war in England, Italy, Japan, Canada, and Australia. It intends, if possible, to achieve in a democracy and by democratic methods the great scientific results which the Germans achieved by autocratic methods in an autocracy while avoiding the obnoxious features of the autocratic regime.

The Council was organized in 1916 as a measure of national preparedness and its efforts during the war were confined chiefly to assisting the government in the solution of pressing war-time problems involving scientific investigation. Reorganized since the war on a peacetime footing, it is now attempting to stimulate and promote scientific research in agriculture, medicine, and industry, and in every field of pure science. The war afforded a convincing demonstration of the dependence of modern nations upon scientific achievement, and nothing is more certain than that the United States will ultimately fall behind in its competition with the other great peoples of the world unless there be persistent and energetic effort expended to foster scientific discovery.

A CASE OF BULLET EMBOLUS.—In the London *Lancet* for January 3, 1920, Mr. H. J. B. Fry records the following remarkable case of bullet migration. Of all the strange and bizarre

wounds which occurred in the great war it seems one of the most unusual.

A soldier while standing by his battery was wounded on April 2nd, 1918. He suddenly experienced a sharp stinging pain in his left foot. Examination of the foot showed no wound, but a small circular wound was found just below the left anterior superior spine of the ilium. Marked ecchymosis of the upper thigh and groin region soon appeared, and clinical signs consistent with arterio-venous aneurysm of the iliac vessels developed. The foot became cold and blue and no pulsation of the leg vessels could be made out. X-ray examination showed no sign of foreign body from the imbrilicus to the knee. Gangrene developed and the leg was amputated below the knee. The patient succumbed one month after the original injury.

It was found at autopsy that the bullet had entered the left external iliac artery and penetrated into the lumen of the left internal iliac vein causing an arterio-venous aneurysm of these vessels. From here the bullet was carried by the blood stream up the common iliac vein and the interior vena cava. It passed through the chambers of the right side of the heart, through the pulmonary valve, into the left branch of the pulmonary artery where it impacted as an embolus in one of the branches supplying the lower lobe of the left lung, and causing two infarcts in this lobe.

Mr. Fry goes on to say that such a tortuous course of the bullet's migration was in itself remarkable, but even more than this, examination showed no injury in any of the veins along which the bullet passed. The tricuspid and pulmonary valves were also uninjured. All through the illness there was no pain or discomfort referred to the heart or lung.

THE FULFILMENT OF AN INFLUENZA PREDICTION.—In the November 8 issue of the *London Lancet* there appeared a prediction of Dr. John Brownlee, D.Sc., based on a careful study of past influenza epidemics, that a recurrence of the 1918 influenza epidemic would occur in January or February, 1920. Doctor Brownlee found that influenza epidemics recurred at intervals of 33 weeks, providing the thirty-third week did not fall between June and December, in which case the recurrence would be expected at the end of 66 weeks or 99 weeks, and therefore he regards the fall epidemic as

an exception to the rule. In the United States we are now having a recurrence after 66 weeks. It is now exactly 66 weeks since the mortality peak of the 1918 epidemic in Chicago. The same is true for New York City and Washington. In all three of these places influenza is now epidemic. The periodicity suggests that we may be dealing with infecting organisms which not only have the power to reproduce themselves in a virulent form continuously for a long period if susceptible persons are exposed, but which also have the power of developing in cycles of 33 or 66 weeks.

The recurrence might be explained on the hypothesis that immunity has lasted 66 weeks, though the hypothesis does not explain the fact already noticed in some families that those attacked in 1918 are now immune, while those not attacked in 1918 are now contracting the disease. The more reasonable explanation seems to be that the present epidemic is due to a definite cyclical regrowth of the infecting organisms from the seed of the former epidemic.

Definite cycles of development are common in the known vegetable and animal world; some plants flower annually, some biennially; the malarial organism may complete its cycle in two or more days; the locust requires in some cases 17 years. Similarly the organism responsible for our recent pandemic may complete its cycle in 33 weeks or perhaps 66 weeks. This recurrence of the epidemic after 66 weeks certainly strengthens the view that the epidemics of 1889, 1890, 1918, and 1920 all have a common etiology.

SOCIETY OF MEDICAL HISTORY OF CHICAGO.

A meeting of the Society of Medical History of Chicago was held on January 17. An address, "Walter Bailey, the first writer of an Ophthalmic Treatise in English," was delivered by Colonel Casey A. Wood, and "Medical Men and Music," and "Remarks on the Medical History of the War," were discussed by Lieutenant-Colonel Fielding H. Garrison.

HONOR FOR BRITISH PHYSICIANS.

—HONORS are reported to have been conferred upon the following British physicians: Sir Bertrand Dawson, physician in ordinary to the king, and dean of the medical faculty of the University of London, has been honored by a peerage. Among those who have been made knights are Dr. J. Court,

who has made researches on diseases of miners; Mr. F. C. Danson, chairman of the Liverpool School of Tropical Medicine; Mr. F. S. Lister, research bacteriologist, South African Institute for Medical Research; and Dr. G. R. Parkin, who has been promoted to the rank of K. C. M. G.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending February 14, 1920, the number of deaths reported was 508 against 262 last year, with a rate of 32.77 against 17.16 last year. There were 68 deaths under one year of age against 39 last year.

The number of cases of principal reportable diseases were: Diphtheria, 45; scarlet fever, 59; measles, 46; whooping cough, 70; tuberculosis, 47.

Included in the above were the following cases of non-residents: Diphtheria, 6; scarlet fever, 3; tuberculosis, 6.

Total deaths from these diseases were: Diphtheria, 7; scarlet fever, 2; measles, 1; whooping cough, 5; tuberculosis, 28.

Included in the above were the following non-residents: Diphtheria, 2; tuberculosis, 1.

Influenza cases, 2,113; influenza deaths, 139. Pneumonia deaths, broncho and lobar: 116.

HARVARD MEDICAL SOCIETY.—A meeting of the Harvard Medical Society was held in the Peter Bent Brigham Amphitheatre on Tuesday evening, February 17. Dr. H. S. Kebejian discussed "The Armenian Situation," and "Studies of Basal Metabolism in Thyroid Adenomata with Hyperthyroidism" were given by Dr. W. M. Boothby.

ITALIAN MEDICAL SOCIETY.—At a recent meeting of the Italian Medical Society in Boston, a number of physicians discussed the advisability of physicians being allowed to prescribe alcoholic liquors to their patients. A number of physicians expressed the belief that this practice would result in using the medical profession as a subterfuge for illicit liquor traffic. Dr. Domizia A. Costa is reported to have said that as a layman he was opposed strongly to prohibition, but at a medical man he believed in following the last issue of the Pharmacopoeia, which abolishes the use of liquor for medicinal purposes. Admitting that there are cases where alcoholic stimulation is advisable when

the patient has been an habitual user of liquor, he expressed the belief that in the treatment of these cases the amount allowed by law is not sufficient.

Dr. Gaetano Praino, secretary of the society, is said to have expressed his belief that prohibition as provided by law is not absolute, as it permits unscrupulous physicians to prescribe liquor just as they now prescribe narcotics.

The following officers were elected for the coming year: Dr. A. De-Robertis, president; Dr. Gerardo Balboni, vice-president; Dr. Gaetano Praino, secretary; and Dr. Scidido Guarino, treasurer.

INFLUENZA IN BOSTON AND MASSACHUSETTS.

—The report of influenza cases on February 2, in Massachusetts, showed an increase of nearly 400 per cent. in the number of cases for the preceding twenty-four hours. This increase possibly may have been due to the sudden change in weather from extreme cold to unseasonable mildness. The influenza cases numbered 1721, of which 380 occurred in Boston; there were 12 deaths from influenza and 19 from pneumonia. Other cities submitted the following reports:

Waltham, 126; Cambridge, 112; Malden, 67; Lynn, 60; Haverhill, 75; Newton, 55; Needham, 57; Fall River, 36; Attleboro, 30; Belmont, 38; Worcester, 67; Greenfield, 42; Pittsfield, 35; North Adams, 14, and Brockton, 9.

The number of cases in the Connecticut River Valley and on Cape Cod showed a considerable increase, although there had been few cases in these districts up to that time.

The daily report issued on February 3 showed 2206 new cases of influenza in Massachusetts, 634 of which were reported from Boston. The disease continued in a mild form, in spite of the increase of cases. A decrease in cases throughout the state to 1879, with 616 in Boston, with 8 deaths from influenza and 9 from pneumonia, was reported on February 4. Cities in the vicinity of Boston reported the following number of cases:

Worcester	136
Somerville	79
New Bedford	63
Lynn	57
Waltham	57
Malden	55
Belmont	35
Fall River	52

Lowell	44
Milton	40
Cambridge	39
Attleboro	37
Andover	37
Chelsea	28
Frammingham	28
Taunton	27

Thirteen deaths from influenza and 14 from pneumonia were included in the report in Boston on February 6. In Cambridge 127 cases were reported, and other cities submitted the following figures: Somerville, 102; Malden, 96; Haverhill, 64; Lowell, 60; Worcester, 57; Lexington, 49; Waltham, 36; Springfield, 33; Amesbury, 31; Sterling, 23; Lynn, 22.

On February 7 there were reported to the state department 1474 new cases of influenza, 405 of which were in Boston. The total number of influenza cases in Boston for the week ending February 7 was 2859, with 66 deaths from influenza and 92 from pneumonia. The shortage of nurses in the city is one of the most serious factors in the situation, and nurses have been urgently asked to volunteer their services during the present time of need. Communities reporting large numbers of cases outside of Boston include the following cities: Cambridge, 97; Haverhill, 77; Wellesley, 57; Malden, 70; Saugus, 44; Lawrence, 42; Worcester, 42; Springfield, 41; Belmont, 37; Somerville, 37; Pittsfield, 31; Fall River, 29; Everett, 28; Holyoke, 21; Beverly, 20.

In Boston there was reported on February 8 the highest death rate from influenza and pneumonia that had occurred up to that time, including 16 deaths from influenza and 14 from pneumonia. A report from Cummington, Massachusetts, on that date stated that more than one-fourth of the entire population was affected by the disease, there being 163 cases of influenza and several of pneumonia. On February 9, 21 deaths from influenza and 30 from pneumonia were reported to the health department in Boston. The state department announced 2002 cases of influenza, 609 of which were reported from Boston. Communities outside of Boston made the following reports: Haverhill, 133; Fall River, 68; Pittsfield, 67; Springfield, 64; New Bedford, 56; Somerville, 54; Cambridge, 49; Worcester, 44; Needham, 37; North Adams, 36; Malden, 33; Winthrop, 32; West Newbury, 30; Lenox, 27.

On February 10, the death rate in Boston reached 18 from influenza and 35 from pneumonia. The report from the state department

showed 2225 new cases of influenza, of which 370 were in Boston. From other centers were reported the following figures: Cambridge, 177; Haverhill, 139; Cummington, 110; Becket, 100; Waltham, 92; Lynn, 83; Worcester, 63; Chelsea, 61; Lowell, 61; Adams, 59; Belmont, 53; New Bedford, 56; Somerville, 53; Quincy, 53; Woburn, 46; Springfield, 40; Fall River, 35; Lexington, 32; Lawrence, 31; Fitchburg, 28; West Newbury, 26; Greenfield, 27.

For the week ending February 14 there was a total number of 2113 cases of influenza in Boston, with 139 deaths from influenza and 116 from pneumonia. On February 15 there were reported 22 influenza deaths and 25 of pneumonia, with 219 new cases of influenza. Exclusive of Boston, 913 cases were reported to the state department of health. In Medford there were 82 new cases, New Bedford, Cambridge, and Fitchburg reported 54 each, Worcester 48, Malden 39, Lowell 38, Somerville 33, Waltham, 32, Townsend 30, Brookfield 31, and Lynn 28. Further decrease on February 17 seems to indicate that the epidemic is on the wane in Massachusetts. To the state department there were reported 1065 cases not including 153 in Boston. Haverhill reported 70 cases, and other cities the following figures: Worcester, 68; Lowell, 68; Cambridge, 57; Malden, 49; New Bedford, 44; Amesbury, 36; Lynn, 36; Belmont, 36; Cummington, 30; Littleton, 29; Melrose, 28.

REQUESTS TO HOSPITALS.—By the will of Sarah L. Newhall of Lynn, the sum of five hundred dollars has been left to the Free Hospital for Women in Brookline and to the Lynn Hospital.

The sum of five thousand dollars was bequeathed to the Newton Hospital by the will of Mr. George B. Knapp of Newton.

To the Choate Memorial Hospital in Woburn fifty thousand dollars has been given recently; but the name of the donor will not be made known until his death.

By the will of Miss Florence D. Boit of Brookline, upon the death of beneficiaries who will receive the income of a trust fund during their lives, the sum of five thousand dollars is to be given to each of the following institutions: Boston Home for Incurables; Boston Nursery for Blind Babies; the Industrial Home for Crippled and Deformed Children; the New England Peabody Home for Crippled and De-

formed Children; the New England Home for Deaf Mutes in Everett; and the Convalescent Home for the Children's Hospital, Wellesley Hills.

NURSES' SCHOOL IN PRAGUE.—Two Boston nurses, Miss Marion Parsons and Miss Alotta Lentell, have arrived at Prague to establish a training school for nurses under the auspices of the American Red Cross and the Czechoslovak Government. The Red Cross has announced that \$20,000 has been appropriated for this work. The American nurses will remain at Prague for three years, and during that time two Czechoslovak women will be sent to the United States to prepare themselves to carry on the work. The Massachusetts General Hospital, it has been reported, has agreed to accept the two pupils.

BEQUESTS OF MRS. MARY D. RICHARDS.—The following bequests were included in the will of Mrs. Mary D. Richards of Boston: Home for Incurables, \$10,000; Waltham Training School for Nurses, \$8,000; Memorial Hospital, Worcester, \$5,000; Waltham Baby Hospital, \$3,000; Boston Association for the Relief and Control of Tuberculosis, \$1,000; Waltham Hospital, \$1,000.

PLYMOUTH HOSPITAL EXPENSES.—The expenses of the Plymouth County Tuberculosis Hospital from June 2, to December 31, 1919, amounted to \$16,010.40, one-third of which was assessed upon Brockton. The balance of \$10,673.60 has been apportioned as follows: Abington, \$465.33; Bridgewater, \$484.72; Carver, \$203.58; Duxbury, \$378.08; East Bridgewater, \$344.15; Halifax, \$67.86; Hanover, \$256.90; Hanson, \$179.35; Hingham, \$824.03; Hull, \$824.03; Kingston, \$193.89; Lakeville, \$135.72; Marion, \$659.23; Marshfield, \$256.90; Mattapoisett, \$252.05; Middleboro, \$601.86; Norwell, \$145.42; Pembroke, \$130.87; Plymouth, \$1,473.50; Plympton, \$53.32; Rochester, \$106.64; Rockland, \$615.61; Scituate, \$587.43; Wareham, \$654.38; West Bridgewater, \$198.74; Whitman, \$610.75.

Dr. Henry C. Tracy of Marquette Medical School has received an appointment as professor of anatomy at the University of Kansas.

The Massachusetts Medical Society.

STATED MEETING OF THE COUNCIL.

FEBRUARY 4, 1920

A STATED meeting of the Council was held in the Boston Medical Library, Wednesday, February 4, 1920, at 12 o'clock, noon. The President, Dr. Alfred Worcester, was in the chair and the following 48 Councilors present:

BARNSTABLE, W. D. Kinney.	PLYMOUTH, W. C. Keith. A. E. Paine.
BRISTOL NORTH, H. G. Ripley. A. R. Crandell, V. P.	SUFFOLK, J. W. Bartol. E. S. Boland. F. J. Cotton. L. J. Cummins. Lincoln Davis. W. E. Faulkner. C. M. Green. G. S. Hill. H. B. Loder. R. W. Lovett. R. H. Miller. Stephen Rushmore. G. G. Smith. R. M. Smith.
BRISTOL SOUTH, E. F. Cody.	
ESSEX SOUTH, W. T. Hopkins. C. H. Bangs. J. F. Jordan.	WORCESTER, W. P. Bowers. M. F. Fallon. Homer Gage. J. O. Gogereux. R. W. Greene. E. L. Hunt. W. L. Johnson. G. O. Ward. F. H. Washburn. S. B. Woodward.
MIDDLESEX NORTH, E. G. Livingston.	
MIDDLESEX SOUTH, E. H. Bigelow. F. G. Curtis. C. E. Hills. A. A. Jackson. C. E. Mongan. W. D. Ruston. E. H. Stevens. A. K. Stone, Treas. Fresenius Van Nuyes. G. L. West. Alfred Worcester, Pres.	
NORFOLK, E. H. Brigham, Libra. G. W. Clement. G. W. Kaan.	

On nomination, duly seconded, Dr. James S. Stone was elected Secretary *pro tempore*. The reading of the record of the last meeting was omitted by vote and the record, as printed in the Proceedings, adopted.

Dr. R. H. Miller, Chairman, read the report of the Committee of Arrangements for the Annual Meeting, which was set for June 8-9.

He stated that no radical changes from the meetings of the recent past were contemplated. The increased cost compelled an estimated expense of \$3,850. It was recommended that the members attending the dinner be charged \$2.00 instead of \$1.00 as heretofore, in order to offset the increased expense.

It was voted to accept the report of the Committee of Arrangements for the Annual Meeting and lay it on the table until the reports of the Treasurer and the Committee on Membership and Finance had been presented.

Dr. C. M. Green, Chairman, read the report of the Committee on Membership and Finance, as to membership.

REPORT OF THE COMMITTEE ON MEMBERSHIP AND FINANCE, AS TO MEMBERSHIP

The Committee on Membership and Finance makes the following recommendations as to membership:

1. That the following named Fellows be allowed to retire, under the provisions of Chapter I, Section 5, of the by-laws:

Comey, Perley Pierce, of Augusta, Georgia.
Paine, Amasa Elliot, of Brockton.
Rogers, Orville Forrest, of Dorchester.
Rogers, Frank Alvin, of Everett.
Smith, Mary Almira, of Boston, as of December 31, 1920.

2. That the following named Fellows be allowed to resign, under the provisions of Chapter I, Section 7, of the by-laws:

Abbot, Edward Stanley, of Philadelphia (1301 Spruce Street).
Averell, Charles Wilson, of Akron, Ohio (459 East Exchange Street).
Cockett, Marguerite Standish, of Paris, France.
Dearborn, Henry Hale, of Milford, New Hampshire.
Foster, Ellis Edwin, of St. Petersburg, Florida.
Gould, Chester Harlow, of Pasadena, California (1145 No. Mich. Ave.).
Hagopian, Levon George, of Lynn (26 South Common Street).
Holt, Henry Ambrose, of Pasadena, California (1110 No. Mich. Ave.).
Loewe, Walter Ralph, of Bronx, New York (2245 Webster Avenue).
Neff, Irwin Hoffman, of Boston (3 Fayette Street). Is leaving for Michigan.
Persky, Myer Arthur, of Providence, Rhode Island.
Richards, Caroline Maria, of Cambridge, with remission of dues for 1918, 1919, and 1920.
Rogers, Orville Forrest, Jr., of New Haven, Connecticut (116 High Street).
Thompson, William James, Hudson River State Hospital, Poughkeepsie, Station B, New York.
Shepard, William G., of Ellington, Connecticut.
Van deVelde, Honoré, of 72 Huntington Avenue, Boston. Is returning to Belgium.

3. That the following named Fellows be allowed to change their district membership, without change of legal residence, under the provision of Chapter III, Section 3, of the by-laws:

Champion, Merrill Edwin, from Norfolk South to Suffolk.
Garrison, James Murry, from Norfolk to Suffolk.
Leland, George Adams, Jr., from Norfolk to Suffolk.
Young, Evangeline Wilson, from Middlesex South to Suffolk.

For the Committee on Membership and Finance,
CHARLES M. GREEN, *Chairman*.

The report of the Committee on Membership and Finance, as to Membership was accepted and adopted.

The President read the report of the Committee appointed to consider the petition of Dr. Alvah H. Warren of Everett for restoration to the Society. It recommended his restoration provided he pay his indebtedness to the Society within one month of February 4, 1920. The report of the Committee was accepted and its recommendations adopted.

The President nominated the following four

committees to consider petitions for restoration to the Society and they were duly appointed by vote:

1. For N. M. Crofts—H. B. Holmes, J. H. Riley, H. J. Millard.
2. For C. H. Keene—T. J. Eastman, G. P. Denny, R. S. Eustis.
3. For T. L. Jenkins—C. G. Bailey, C. K. Blair, Byron Sanborn.
4. For W. J. Stickney—H. E. Sears, R. E. Stone, L. C. Swan.

Reports of the Treasurer, the Certified Public Accountant and the Auditing Committee were read by Dr. A. K. Stone.

A motion to accept and adopt the reports was seconded and carried.

Dr. C. M. Green, Chairman, read the report of the Committee on Membership and Finance as to the Budget.

Dr. S. B. Woodward: Is it proper to ask a question about this budget at this time?

The President: Certainly.

Dr. S. B. Woodward: I would like to call attention to one thing and that is the increase in the amount of the appropriations. The expenses of the president have remained at \$100 for several years. I know that when I was president I suffered from that. I am sorry to say that I was obliged to foot as much of the expenses of the president as I could, being chairman of the Committee on State and National Legislation and therefore with many duties to perform. I think if any member of the Society should figure out the legitimate expenses of the president, he would find that it is absolutely impossible to get along on \$100. It certainly cost me twice that amount to get around and do the absolutely necessary work of the president. It seems to me that the allotment for the president ought to be more than \$100.

I would like to inquire about the appropriation of the Committee on State and National Legislation: That appropriation has been \$250 for several years, and that Committee has spent only \$50. I wonder if there is any reason for the request for the larger appropriation of \$720 for the coming year.

The President: The Committee on State and National Legislation has voted to employ an agent, to keep in touch with legislation and to aid in publicity. On motion, duly seconded, the Budget was adopted by vote.

Dr. G. W. Kaan: Is it proper to discuss the question of the disposal of the balance of \$2,500?

The President: Yes.

Dr. G. W. Kaan: I would like to speak in reference to the disposal of the \$2,500, as treasurer of the Norfolk District Medical Society and having to do with the expenses of their meetings and also with the refund of this fund. We have found in our district that in order to

get a large attendance it is necessary to do something besides furnish a good speaker, so we provide a collation, and our meetings cost \$100 a month, reckoning cigars, printing, and dinner. In our district at our annual meeting we expect to go to the American House and pay so much per plate and charge the members a dollar, so the expenditures of the Society will be \$1.50.

Now in addition to this refund which we get from the State Society we asked the members to contribute a dollar each, and with all that we barely get through. It seems to me that the local societies and the State Society through the local societies get much advantage from these local meetings. They get far more benefit from them than from the annual dinner at the Copley-Plaza. We must consider the question of whether men will want to spend two dollars instead of one dollar for the annual dinner.

I move that the \$2,500 be appropriated as in the past as a dividend for the District Societies.

Dr. G. O. Ward: I second the motion.

The President: It has been moved and seconded that the \$2,500 balance which the treasurer according to the budget places at the disposal of the Council, be distributed to the district societies. Of course, you realize that will be leaving the Committee of Arrangements for the Annual Dinner without a cent: Is there anything further to be said?

Dr. Ward: I beg to call your attention to the benefits of this dividend pro rata to the district societies. Taking the Worcester District Medical Society as a sample, this annual rebate furnishes funds for the annual meeting for which we have no other source of income. If no dividend is made, we have to choose between no meeting and a special assessment. Second, this meeting furnishes an incentive for the district treasurer to dun the fellows for dues. Under the by-laws a fellow is in good standing until he is three years in arrears and the Council has acted. You see what the abandonment of this custom will bring. Then the subscription list of the BOSTON MEDICAL AND SURGICAL JOURNAL is made on the basis of dues, and the mailing list is made up on March 1. Every tardy payment makes confusion naturally result. The alternative suggested, if no rebate is made, is a special assessment on the district societies if they are to continue their activities. There are two ways to do it: to print bills of the regular amount and try to collect them. If you know the temper of the fellows, you know that some demur at a double due and perhaps only pay the compulsory part and let the other go indefinitely. The other way is to collect a local assessment, leading to a double set of books.

Finally, my opinion is that this rebate provision cannot be improved upon. It is an essential factor in the prosperous condition of the local treasuries as well as of the State Society.

Dr. C. H. Bangs: It seems to me that the

question comes down to where the growth and activities of the Massachusetts Medical Society center, whether they center in the local societies or in the annual meeting. It seems to me that the recruiting ground in the Massachusetts Medical Society is in the district societies, and according to the success of the district society meetings there is developed the local interest and the progress, and the local increase in membership. When I first became active in the affairs of the Essex South District Medical Society, an investigation of the books showed that we had had an average attendance of ten at the meetings previous to that time. Since that time there has been a concerted effort to make the attendance larger by introducing speakers of national reputation as often as possible, frequently speakers of international reputation from distant societies have been called, and we have doubled the average attendance and we have often had one hundred present at a meeting. I think that the interests of the Society lie very materially in not lowering the appropriations that go to the district societies. I do not feel that the membership in the Society is very materially increased by the annual dinner. I think if we are to make the choice between the appropriations for the annual dinner and the appropriations which go to the district societies we should make those appropriations for the district societies. Our district society does not begin to pay expenses; we have an extra assessment made on the members; we meet it cheerfully by collecting a fund we can draw upon, and I think no society has made greater progress than the Essex South District Society by carrying out that policy.

In response to a question as to the amount of the dividend in the past, Dr. C. M. Green said it was \$2,500. It used to be \$4,000. Then it was cut down and in the last few years it has been \$2,500. Of course, the amount received varies; the greatest amount goes to Suffolk, then Middlesex South, then Norfolk, and Worcester the fourth; the amount varying, some getting only a small sum of money.

Dr. R. H. Miller: Of course, Mr. President, if all of this \$2,500 is allotted to the district societies, that means that there must be a radical departure in the conduct of the annual meeting. It has got to be different from what it has been in the last few years, except in 1918, when most of the meetings were held in this building. I think if we gave up all the attractions of the annual meeting such as we have had in the past few years, it will detract from the number of men that will come. Of course, the general consensus of opinion should guide us in what we are going to do, and it is going to make it difficult to run the annual meeting if we are not going to have any funds with which to run it. I think the annual dinner attracts a great many men here and I think it ought not to be abandoned.

The President: Of course, I am influenced by the fact that I have got to run the annual dinner, and it will make it extremely difficult to run it if we are not going to have any money. Of course we must have an annual meeting if with no other attractions than meetings in this building.

Dr. C. M. Green: I might say that last year we faced a similar difficulty; and the committee suggested three different plans. One of the plans was to give the Committee of Arrangements \$500, which would enable them to cover the expenses without a dinner. Of course, if there is to be a pop concert, it will cost more.

The President: The motion is to distribute \$2,500 to the district societies. I understand that would leave no appropriation for the annual meeting.

Dr. C. M. Green: Dr. Stone says that we have a contingent fund of \$600. That is on the Committee report. But on the other hand, we have the expenses of the delegates to New Orleans; if we send them we have to pay their bills. Of course, times have changed. I remember when some of the delegates received nothing from the Society. A delegate went anywhere he was sent and made no charge; but times have changed. Now everybody wants to be paid, so everything must be different with our budget. There is a fund of \$600 appropriated for contingent expenses; but suppose the expense of defending malpractice suits costs \$600 to \$900. Those bills have to be paid. We have to remember that last year there was a deficit of \$1,400. That amount was spent by the treasurer out of the fund which he supposed he was relying on for income. But it would be possible for the Committee to have \$500 for the necessary expenses of the annual meeting, omitting the festivities, and still have \$2,000 for the District Societies.

It will be noted that while the Committee does not make a motion now, I was instructed to say that in view of the increased cost, they think it necessary to increase the annual dues to \$7.00 in 1921.

Dr. S. B. Woodward: Of course, one of the great expenses of the Society is the expense connected with the BOSTON MEDICAL AND SURGICAL JOURNAL. I noticed that that was increased over the amount expended last year. I wonder if it is possible to save anything on that. I have not the figures that were read.

Dr. A. K. Stone: Dr. Woodward inquired why there was an increase in the budget in connection with the BOSTON MEDICAL AND SURGICAL JOURNAL. That was based on the number of members who receive the Journal. The vote of the Council was that for each member in good standing \$3.00 should be paid for the JOURNAL. If a man does not pay his dues on the first of March, he does not receive the JOURNAL.

Dr. S. B. Woodward: There may be a deficit!

Dr. A. K. Stone: It is possible, though last year was one of uncertainty. The district treasurers could not tell how much money they were going to get. And this year it is hoped that conditions will be better, because now everybody is back and will pay his dues.

Dr. C. M. Green: Everybody has his income cut in two by the dollar being worth but fifty cents. We are paying this year \$6.00 for all the activities; and our dues should really be \$10.00 a year in order to have the Society live.

Dr. A. K. Stone: The members of the Society are pretty nearly all in good standing at the present time. If those who went to war, had back dues, these have been paid into the district treasuries. Such dues were paid by the district societies very largely. Then last year everybody staying in service was exempt, and therefore in good standing, so that we start the year with pretty nearly everybody in good standing, but how we will come out at the end of the year is another matter.

I would suggest the cutting of the \$2,500 to \$2,000,—that is, cut down the dividend to the district societies just so much and let the Committee of Arrangements have \$500.

The President: The Council has under consideration the motion that \$2,500 be given to the district societies. The question is: Shall the \$2,500 be distributed among the district societies?

Dr. R. H. Miller: If each district society spends between \$500 and \$600 during the year in its meetings and dinners, and if each society is given a proportion of this \$2,500, if we divide it up evenly, which of course is not done exactly, it will get \$138. That means if the societies were to spend \$600, it would leave each to raise for itself \$462.

I feel very strongly that the giving of this \$2,500 and taking it away from the annual meeting is going to change the annual meeting to such an extent that a good many men who would otherwise come will not come. I believe it will cut the number down to 300. I am strongly against that. I feel that the annual dinner is a very important thing, and I think that to give up that and to give \$138 to each district society is a great mistake.

The President: The question is: Shall the \$2,500 be distributed among the district societies?

On a standing vote the motion was lost, the vote being 17 in favor and 20 opposed.

The President: The motion having been lost to distribute \$2,500 to the district societies, what is your pleasure? Have you anything to say as to how that money shall be used or are you ready to take from the table the report of the Committee of Arrangements?

Dr. W. P. Bowers: I would like to say a word on the dinner. I am sorry that the motion

was lost. I do not feel that men come to the annual meeting for the dinner; in the old days they did. This year they have got to pay at least \$2.00 for the dinner, and I think it is a poor thing if we can't have a meeting of the Massachusetts Medical Society without a pop concert or a dinner to bring them in. It seems to me that if we arrange a good program, it will bring the men here. I think we ought to conduct the meeting as economically as possible.

Dr. S. B. Woodward: I would like to explain why I voted against the distribution of this \$2,500 and I would like to make a motion. Apparently the distribution of the \$2,500 would have left the Committee without a cent to prepare for any meeting. I do not believe with the last speaker that we should have a meeting without a dinner.

I move that we distribute \$2,000 as a dividend, instead of the \$2,500, and that \$500 be given to the Committee of Arrangements.

Motion seconded and carried.

Dr. W. P. Bowers: Apparently there is some misconception as to the activities of the Society. There seems to be a diversity of opinion as to the value of belonging to the Massachusetts Medical Society, and the vote for the distribution to the district societies was a most important measure. If that had been defeated, there would have been almost a revolution in the Massachusetts Medical Society. I say that from knowledge of conditions outside of the eastern part of the State. There has been developing in recent years a very strong feeling against certain customs in conducting the annual meetings, and many of the remote societies have felt very sensitive in the last few years because they have felt that they have not been generously treated. So I am glad that \$2,000 has been given to them, while \$2,500 has been denied.

Now, when it comes to the annual meeting, while the scientific part is important, the social feature is also important; it is my opinion that the Society should not omit the social feature of the annual meeting. But it seems to me unwise to assess the remote districts for the expenses of the annual meeting. Therefore it is very much wiser to continue the annual dinner and pop concert, but to have the participants pay the expense, and to have them pay the whole expense. We shall have a very much smaller number at the annual dinner, but the people who attend will feel that they are paying their own expense and not assessing it on the members at large.

So I make a motion that we continue to have the annual dinner and that the members who participate pay the entire cost.

Dr. S. B. Woodward: I was going to make a motion to that effect, and I wish to endorse everything that Dr. Bowers said, and I second his motion.

The President: It has been moved and seconded that the Committee of Arrangements pro-

vide the annual dinner and that the expense be divided among those who attend.

Motion carried.

The President: We will hear from Dr. Gage, chairman of the Committee on Revision of the By-Laws.

Dr. Homer Gage: The previous edition of the by-laws has been exhausted, and a new edition must be printed. Copies of the revised draft have been sent to the Councilors. There are very few changes, no radical changes. The sections having to do with discipline and the code of ethics have been revised by the aid of the Committee on Ethics and Discipline, and suggestions from the various officers and standing committees have been incorporated. Dr. Gage read several passages of the new draft and compared them with the existing by-laws.

The President: What is your pleasure with regard to this report?

Dr. Ward offered some suggested changes in phraseology in Section 1, Chapter I; Section 3, Chapter III, and Section 3, Chapter V. These were read and adopted.

In reply to a question as to whether lodge practice, which is condemned by the code of ethics of the American Medical Association, is permitted by the proposed code, Dr. Homer Gage stated the Committee had been very cautious. There are some things too hot to handle. Our Code of Ethics has never corresponded exactly with the code of ethics of the American Medical Association, and whenever we have tried to make it so, we have got into a long dispute; and we felt that putting it in this way, simply to apply general rules, is better than to give detailed instruction as to conduct in all possible conditions. We have taken the Code of Ethics exactly as we have always had it and have not changed it in any way except to take out redundant phrases, making it read exactly as it did before. I do not think the Committee would be willing to accept and recommend the Code of Ethics of the American Medical Association.

Dr. Bangs: Referring to Section 4, at the top of page 17, in the draft of the by-laws, after specifying that the Committee on Ethics and Discipline shall consist of five members and any charge shall be in writing, the language reads: "It may also on its own initiative investigate any case of alleged misconduct on the part of a fellow if deemed advisable and report its findings." The question that arises is as to the phrase, "if deemed advisable." A committee of five is authorized to investigate under their own initiative any member. Should it not be compulsory upon them to make that report to the president? It seems to me that if a matter is sufficiently important for a committee of five to take up, that their findings should be reported to the Society. If it is a matter of exoneration against a member of the Society, that member is entitled to have it placed on record. If it is a case of discipline, that should be placed before the Society.

Dr. Homer Gage: The committee may also investigate and report cases. "They may" is the language used, and the only thing we have added is that if they are going to recommend any disciplinary measure, they must report.

Dr. Bangs: "And if deemed advisable." It seems optional with the committee whether they shall report or whether a charge shall be stifled in committee.

Dr. Homer Gage: Your idea is that the Committee ought to report any way, either conviction or not.

Dr. Bangs: Yes.

Dr. Homer Gage: It seems to me that that is a very unwise thing. There are a lot of petty things that come up, which it seems to me should not be made matters of record, little bits of gossip, unfounded charges, jealousies, etc.

Dr. S. B. Woodward: In the past I have been myself a member of the Committee on Ethics and Discipline, and it seems to me that it is unwise to require the committee to report nine-tenths of the things that come up, for they are unimportant.

A motion to approve the by-laws with the changes in phraseology as noted was seconded and carried.

The report of the Committee on Medical Education and Medical Diplomas, furnishing a new list of medical schools and colleges, diplomas from which are accepted from applicants for fellowship, was presented by the President, who stated that copies had been sent to the Councilors. A motion to accept the new list of medical colleges was seconded and carried.

The President made the following nominations of members as delegates to the annual meetings of New England medical societies and they were duly appointed by vote:

Maine: Charles H. Bangs, Fred M. Stiles.

New Hampshire: Fred R. Jonett, A. W. Dudley.

Connecticut: Oliver H. Howe, D. E. Baker.

Rhode Island: Wallace C. Keith, Arthur L. Beals.

Dr. W. P. Bowers: We have with us two gentlemen who I understand wish to make some remarks. I move that the privilege of the floor be given to Dr. Stetson of Greenfield and to Dr. Lund of Boston. So voted.

Dr. H. G. Stetson: Dr. Lund and I are two of your delegates to the House of Delegates of the American Medical Association, and have been for some time past. In the past year I personally, and I think Dr. Lund also, have been asked by delegates, "When are we coming to Boston?" And there immediately follows an expression of the appreciation of the good time the Association had in Boston in 1906. This year the Association meets in New Orleans. Next year they will probably come east, and the year following they will go west again. It seems to me that if the Massachusetts Medical Society is desirous to have the

American Medical Association meet in Boston, the meeting in 1921 would be an opportune time. I can say positively that the House of Delegates would not consider coming to Boston without an invitation direct from the Massachusetts Medical Society; and while I am not in any way, or is Dr. Lund, urging you to have the American Medical Association meet in Boston, at the same time we both feel that if it is your desire to have this association meet in Boston next year or very soon, that this is a very opportune time to express the desire. I feel sure that if it became voiced in the House of Delegates that Boston was anxious to have the meeting held here in 1921, that practically every other city would be dropped out of consideration. And it is my purpose to bring that to your attention, if you desire it to say so, and if you don't desire it, to be frank in saying so, but I have asked for the time to bring it to your attention. Dr. Lund and I appreciate that the Massachusetts Medical Society should not take definite action without careful consideration and without talking the matter over with those medical societies which have a membership in Boston, because they are the ones to take active concern in it, but that can be arranged through committees.

Dr. F. B. Lund: I know the American Medical Association would like to come to Boston. If the Council will vote to invite the American Medical Association to Boston, and the Suffolk District Medical Society will second it, then Dr. Stetson and I, who are going to New Orleans, can extend a hearty invitation. We want to get them next year; if not, we may get them three years from now.

On motion by Dr. Lovett, it was voted unanimously that the delegates to the next meeting of the House of Delegates of the American Medical Association are instructed, in case this project is approved by the Suffolk District Medical Society, to invite the American Medical Association to meet in Boston in 1921.

Dr. R. W. Lovett spoke of the importance from a medical point of view of the bill before Congress providing for Universal Military Training. He felt sure that safeguards were provided against contagious diseases and mentioned the advantages to be derived from the detection of defects through physical examination. The incidental advantages to the medical profession through training in military matters was also mentioned.

It was moved and voted to request the Committee on State and National Legislation to endorse from a medical point of view the bill for Universal Military Training now before Congress.

Adjourned at 1.55 P.M.

JAMES S. STONE,
Secretary pro tempore.

TREASURER'S REPORT.

SHOWING THE ASSETS AND LIABILITIES OF THE
MASSACHUSETTS MEDICAL SOCIETY

DECEMBER 31, 1919

Schedule A.

ASSETS.		
<i>Cash.</i>		
New England Trust Co.	\$275.01	
Old Colony Trust Co.	3,259.44	\$3,534.45
<i>Investments</i>		
<i>Shattuck Fund</i>		
Annuity Policy Mass. Hos- pital Life Ins. Co.	9,166.87	
<i>Phillips Fund</i>		
Mass. 3½% Gold Bonds .	10,000.00	
<i>Cotting Fund</i>		
Deposit in Institution for Savings in Roxbury and Vicinity	1,000.00	
Deposit in Provident Insti- tute for Savings in the Town of Boston	1,000.00	
Deposit in Suffolk Sav- ings Bank for Seamen and Others, Boston	1,000.00	
<i>Permanent Fund</i>		
Annuity Policy of Mass. Hospital Life Ins. Co. . .	11,253.30	
Mass. 3½% Gold Bonds	6,000.00	
Deposit in Franklin Sav- ings Bank of the City of Boston	1,074.48	
Liberty Bonds—First Is- sue 3½%	5,000.00	\$45,494.65
Total		\$49,029.10

LIABILITIES.

<i>Endowment Funds</i>		
Shattuck Fund (G. C. Shat- tuck, 1854. Balance, 1866)	\$9,166.87	
Phillips Fund (Jonathan Phillips, 1860)	10,000.00	
Cotting Fund (B. E. Cotting, \$1,000, 1876, 1881, 1887) ..	3,000.00	\$22,166.87
<i>Surplus</i>		
Balance January 1, 1918 ..	28,335.56	
Deficit for the year. <i>Sched- ule B</i>	1,473.33	26,862.23
Total		\$49,029.10

Liberty Bonds representing the investment of the Fund for a Professorship of Military Medicine were returned to the donor June 12, 1919 as directed by vote of the Council.

STATEMENT SHOWING THE CURRENT ACCOUNT OF THE MASSACHUSETTS MEDICAL SOCIETY
FOR THE YEAR ENDING DECEMBER 31, 1919.

Schedule B.

CREDIT.

<i>Assessments paid to District Treasurers</i>		
Barnstable	\$144.00	
Berkshire	377.00	
Bristol North	303.00	
Bristol South	710.00	
Essex North	800.00	
Essex South	1,097.00	
Franklin	168.00	
Hampden	787.00	
Hampshire	291.00	
Middlesex East	357.00	
Middlesex North	279.00	
Middlesex South	2,788.00	
Norfolk	2,180.00	
Norfolk South	374.00	
Plymouth	524.00	
Suffolk	3,396.00	
Worcester	1,493.00	
Worcester North	377.00	\$16,445.00
Assessments paid to Treasurer	1,012.00	
Paid at Annual Meeting	144.00	
Total	1,156.00	
Less return of overpaid assessments	38.00	1,118.00
Total Assessments (carried forward)		\$17,563.00

Total Assessments (brought forward)		\$17,563.00
Dinner Tickets		490.00
Income Shattuck Fund		412.51
Income Phillips Fund		
Massachusetts 3½% Gold Bonds		350.00
Emmons and Associates Fund (Balance Jan. 1, 1919)		452.25
Income Cotting Fund		
Interest—Institution for Savings in Roxbury and its Vicinity	40.00	
Interest—The Provident Institution for Savings	65.45	
Interest—Suffolk Savings Bank	40.00	145.45
Income Permanent Fund		
Annuity Policy Mass. Hospital Life Ins. Co.	506.40	
Mass. 3½% Bonds	210.00	
Interest—Franklin Savings Bank	48.32	
Liberty Bonds 3½% First Issue (2 years)	350.00	1,114.72
Income from Deposits in Banks		
New England Trust Co.	171.28	
Old Colony Trust Co	63.99	235.27
Total		\$20,763.20

DEBIT.

General Expense		
President's Expense	\$90.65	
Secretary's Expense	666.98	
Treasurer's Expense	271.38	
Librarian's Expense	34.42	
District Treasurer's Expense	1,017.13	
Supervisors' Expense	18.54	
Censors' Expense	476.61	
Rent	750.00	
Salaries	2,000.00	
Delegates' Expense	179.88	
Boston Medical and Surgical Journal		9,711.50
Shattuck Lecture, 1917 and 1919		400.00
Committee Expense		
Arrangements	\$2,262.88	
State and National Legislation	45.16	
Ethics and Discipline	9.36	
Public Health	{ \$107.17	
Emmons and Associates Fund	{ 452.25	559.42 2,876.82
Annual Dividend to District Societies		2,500.00
Defence of Malpractice Suits		825.63
Cotting Lunches		416.99
		\$22,236.53
Deficit		\$1,473.33

ARTHUR K. STONE, Treasurer.

RECONCILIATION BETWEEN THE PROFIT AND LOSS AND BUDGET FOR THE YEAR ENDING
DECEMBER 31, 1919.

	Profit and Loss Account	Budget Estimate	Difference Loss	Gain
Revenue				
Assessments	\$17,563.00			
Investments	2,257.95			
Total Society Revenue	\$19,820.95	\$21,000.00	\$1,179.05	
Emmons and Associates Fund	452.25			
Dinner Tickets	490.00			
Total as per Auditor's Report	\$20,763.20			
Expenses				
Salary of Officers	\$2,000.00	\$2,000.00		
Expenses of Officers				
President	90.65	100.00		9.35
Secretary	666.98	600.00	66.98	
Treasurer	271.38	150.00	121.38	
Librarian	34.42	20.00	14.42	
District Treasurers	1,017.13	1,200.00		182.87
Supervisors	18.54	30.00		11.46
Censors	476.67	300.00	176.61	
Delegates	179.88	300.00		120.12
Rent	750.00	750.00		

Boston Medical and Surgical Journal	9,711.50	9,100.00	611.50
Defense of Malpractice Suits	825.63	600.00	225.63
Shattuck Lecture	400.00	200.00	200.00
Cotting Lunches	416.90	250.00	166.90
Standing Committees			
Membership and Finance		5.00	5.00
Ethics and Discipline	9.36	25.00	15.64
Medical Education and Medical Diplomas		50.00	50.00
State and National Legislation	45.16	250.00	204.84
Public Health			
Total Expenditures	559.42	200.00	92.83
Emmons and Associates Fund		452.25	
Committee of Arrangements for Annual Meeting	2,262.88	2,000.00	227.12
Proceeds from Sale of Tickets		490.00	
Dividends to Societies	2,500.00	2,500.00	
Contingent Expenses		370.00	370.00
Total	\$22,236.53	\$21,942.25	\$2,762.56
Budget for 1919		21,000.00	
Emmons and Associates Fund		452.25	
Sale of Tickets to Annual Dinner		490.00	
Total		\$21,942.25	
Net Deficit	1,473.33		1,473.33

\$2,762.56 \$2,762.56

REPORT OF AUDITING COMMITTEE.

January 30, 1920.

We have this day examined the securities of the Society in the safe deposit box of the Bay State branch of the Old Colony Trust Company, and find them correct as listed. The report of the certified accountant we accept and submit.

CHARLES H. HARE.

CORNELIUS J. MCCORMICK.

Auditors.

LETTER OF CERTIFIED PUBLIC ACCOUNTANT.

Boston, January 29, 1920.

DR. CHARLES H. HARE, DR. C. J. MCCORMICK,
Audit Committee, Massachusetts Medical Society,
Boston, Mass.

Gentlemen:

In accordance with your instructions I have audited the books and accounts of your treasurer, Dr. Arthur K. Stone, for the year ending December 31, 1919, and enclose herewith.

Schedule A Statement showing the Assets and Liabilities of the Massachusetts Medical Society, December 31, 1919.

Schedule B Statement showing the Profit and Loss Account of the Massachusetts Medical Society for the year ending December 31, 1919.

The cash on deposit with the banks has been reconciled with the bank statement and found to be correct. Disbursements have been verified, postings to the ledger checked, and trial balance found to be in balance. I have not examined the securities in the safe deposit vaults of the Society.

Respectfully submitted,

HORACE C. HARTSHORN,

Certified Public Accountant.

BUDGET.

The Committee on Membership and Finance submits and recommends the adoption of the following budget for the fiscal year 1920:

Income

Estimate of the Treasurer \$22,600

Appropriations for Expenditures

Salaries of Officers:

Secretary	\$800
Treasurer	500
Librarian	400
Editor	300

\$2,000

Expenses of officers:

President	100
Secretary	750
Treasurer	200
Librarian	50
District Treasurers	1,200
Censors	300
Supervisors	30
Delegates to annual meeting of A.M.A.	300

2,930

\$4,980

Rent of accommodations at the Medical Library	750
Boston Medical and Surgical Journal (appropriated in October)	10,500
Defense of Malpractice Suits	600
Shattuck Lecture	200
Cotting Lunches	400

Standing Committees:

Membership and Finance .. \$	5
Ethics and Discipline	25
Medical Education and Medical Diplomas	250
State and National Legislation	720
Public Health	700

1,700

Special Committees:

Industrial Insurance	50
Revision of By-Laws	350

Contingent Expenses	400
Unappropriated balance	620

22,800

In this budget no provision is made for the expenses of the annual meeting or for paying a dividend to the District Societies. In the judgment of the Committee it seems wiser to leave to the Council to determine what use to make of the unappropriated balance, in view of these two claims on the resources of the Society.

In view of the increased cost attending all the activities of the Society, the Committee foresees the necessity of increasing the annual dues for the year 1921.

For the Committee on Membership and Finance,

CHARLES M. GREEN, Chairman.

Miscellany.

NEW ENGLAND WOMEN'S MEDICAL SOCIETY.

In June, 1919, there died in Boston a leading woman physician, Dr. Sarah Bond Frasier. She touched the life of the community at many points: as active practitioner, as lecturer at schools and college, as medical examiner, as consultant, as senior hospital officer.

The New England Women's Medical Society, which she recently served as president, converted one of its meetings into a memorial to her, and voted to inaugurate a permanent memorial to her of an educational nature.

The speakers at this meeting brought out in vivid and touching detail the attributes that made her a great physician and a beloved adviser. Among them were the thoroughness and accuracy necessary to science, the fact that can dominate without giving pain, the courage that speaks the unwelcome word when necessary, and the sympathy that makes it tolerable. Through them all ran the humility that always laughed away any suggestion of superiority in skill or judgment.

Her office was a crowded place, and her office hours interminable. To every expostulation against such lavish personal attention, she replied, "But I sent them away happy"; and to her this was unanswerable.

Her life service culminated in a year's work for the government, when she lectured, under federal auspices, to factory girls in several states on the problems of social hygiene. In this service she acquired the sickness that led six months later to her death.

Throughout the community her death has caused a deep sense of loss: among patients and students from whom a life-long friend and counselor has been taken; among physicians, who know only too well that her skill in diagnosis and treatment will not soon or easily be replaced.

The local society of women physicians asks Dr. Frasier's friends and patients to unite in placing in its hands a sum of money which shall continue the medical education of women who shall be considered her worthy representatives. The sum of \$5,000 will provide a scholarship in a medical school, and make possible

for other brave and eager young women the training which she herself procured at the hardest. A lesser sum would pay for a desk in a research laboratory, where individual creative work would be done in her name. Any public memorial to her would bear the name Sarah Adams Bond, under which she did most of her work.

The treasurer of the central committee is: Mrs. A. W. Goodnow, 27 Burroughs Street, Jamaica Plain, Mass.

From her colleagues in medicine and education, from all who appreciate the work of women in medicine, and from the host of those whom she "sent away happy," we ask gifts ranging from the smallest unit upward without limit. By investing such gifts in the training of youth for similar service, we shall make sure that her influence in the community shall never fail.

ALICE H. BIGELOW, M.D., *Chairman*,

ANNA G. RICHARDSON, M.D.,

MARGARET NOYES KLEINERT, M.D.,

MISS MARGUERITE SANDERSON,

MRS. ALBERT W. GOODNOW.

Make checks payable to Henrietta F. Goodnow, 27 Burroughs St., Jamaica Plain.

SEGREGATION OF THE FEEBLE-MINDED.

FEEBLE-MINDEDNESS is sapping the vital forces of the nation; to cure this evil, community control, through identification, registration, instruction, supervision, and segregation, are necessary. In this connection, George A. Hastings, executive secretary of the mental hygiene committee of the State Charities and Association of New York, is reported to have spoken as follows before the National Conference of Social Work:

"A complete census of the feeble-minded in this country has never been taken, but it is estimated that there is one feeble-minded person to every 250 of the population, or approximately 400,000 in all. About 12,000 men have been rejected from the new national army on account of nervous and mental disorders; and one-third of these were rejected on account of feeble-mindedness.

"The community must awaken to the importance of controlling feeble-mindedness, or the increasing burden of crime, inefficiency, dis-

ease, immorality and poverty resulting from it will stagger coming generations. The effect of the prevalence of feeble-mindedness on the effective man-power of the nation, in the light of the national army figures, can scarcely be called negligible.

"It is becoming more and more evident that the proper place to discover the feeble-minded is in the schools. Here their condition can be diagnosed and instruction suited to their capabilities provided, or, if they are to require supervision or segregation for life, this can be obtained before they have gone out into the community and come in conflict with the law and society and become criminal, immoral, diseased or paupers.

"New York state alone has an estimated feeble-minded population of about 35,000.

"A practical working program for the various states which would take them a long way on the road to a solution includes:

"Awakened public knowledge and conscience through making the facts about feeble-mindedness more generally known.

"Placing squarely up to each state its responsibility for dealing with the problem.

"A central registration of all feeble-minded in the community.

"Establishment of institutions and schools for segregation and training.

"Facilities in connection with courts to determine mental condition of prisoners before sentence.

"Establishment of more ungraded classes in public schools to provide training adapted to the capacity of backward and defective children.

"A system of community supervision for the feeble-minded who can safely be left in the community after being properly trained."

In the Public Health Report for May 17, 1918, an interesting article on this subject has been published, dealing with the personality of feeble-minded children in the general population. Children who grade below normal intelligence in psychological tests should be more carefully studied. Binet and Simon claim that a feeble-minded child does not resemble a normal child whose mental development is simply retarded; the mental equipment of the former lacks equilibrium and balance. Five types are discussed to illustrate the plan for psychiatric study and the tentative classifica-

tion of feeble-minded children: (a) those who show "shut-in" tendencies, (b) those with manic-depressive-like reactions, (c) those allied with the manic-depressive group, (d) those who show the egoistic and epileptic temperament, and (e) those who show a fatuous temperament. Constitutional traits must be taken into account when making a diagnosis of mental deficiency and a knowledge of psychiatry is an important requisite. These types should be segregated early in life in certain types of institutions, regardless of the financial status of the family, so that early training may prevent the development of the vicious tendencies which a feeble-minded child easily adopts, and which, when once developed, are not readily overcome.

TO AND FROM THE ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT NEW ORLEANS, APRIL 26-30, 1920.

THE Travel Department of the American Express Company has undertaken to take charge of arrangements for transportation, both rail and boat, to the meeting of the American Medical Association at New Orleans, April 26-30, 1920, and for hotel accommodations while in that city. Those desiring to make the trip are advised to get into touch with the Travel Department, American Express Company, 43 Franklin Street, Boston, or with the nearest agent of the American Express Company, for full information.

WALTER L. BURRAGE,

Secretary, The Massachusetts Medical Society.
March 4, 1920.

PHARMACOPOEIAL CONVENTION, MAY 11, 1920.

The Tenth Decennial Pharmacopoeial Convention of the United States is to be held on May 11, 1920, at the Willard Hotel, Washington, D. C., at 10 A.M. All incorporated bodies and other institutions entitled to membership in this Convention are entitled to apply at once to Dr. Noble P. Barnes, Arlington Hotel, Washington, D. C., for the necessary blanks for membership in the Convention.

Prior to the meeting of the Convention, the Committee on Credentials will meet in Washington to consider all applications which are made. It is important, therefore, that all applications for membership should be in the hands of Dr. Barnes at least six weeks before the date of the meeting. It will be difficult to consider properly credentials which are delayed beyond that date and especially those which may be presented at the time of the meeting.

PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY.

Tenth Conference of Industrial Physicians and Surgeons, State Capitol, Harrisburg, Thursday, March 25, 1920.

Morning Session: 9.30 A.M.

Chairman: Dr. Francis D. Patterson, Chief, Divi-

sion of Industrial Hygiene and Engineering, Pennsylvania Department of Labor and Industry.

Address of Welcome. Hon. Clifford B. Connelley, Commissioner, Pennsylvania Department of Labor and Industry.

1. The Rehabilitation of the Industrial Cripple. Dr. Harry E. Mock, President, American Association of Industrial Physicians and Surgeons, Chicago, Ill.
2. The Problem of the Malingering. Dr. Judson C. Fisher, New York City.
3. Heart Disease in Relation to Industrial Efficiency. Dr. William E. Robertson, Philadelphia, Pa.
4. The Physically Substandard Worker. Dr. Irving Clark, The Norton Company, Worcester, Mass.

Afternoon Session: 2:00 P.M.

1. Influenza. Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania, Philadelphia, Pa.
2. Health Education in Industry. Dr. C. E. Ford, General Chemical Company, New York City.
3. Plant Dispensaries and Their Equipment. Dr. C. D. Selby, Toledo, Ohio.
4. Occupational Diseases and Their Compensation. Dr. Frederick Hoffman, Third Vice-President and Statistician, Prudential Insurance Company of America, Newark, N. J.

SOCIETY NOTICES.

AMERICAN MEDICAL EDITORS' ASSOCIATION.—The fifty-first annual meeting of the American Medical Editors' Association will be held at the Grunewald Hotel, New Orleans, La., on Monday and Tuesday, April 26 and 27 (during the week of the A. M. A. convention), under the presidency of Dr. Seale Harris, Editor of the *Southern Medical Journal*.

A most interesting program has been arranged, and every doctor even remotely interested in medical journalism will find it to his advantage to attend.

It is advisable for you to make early reservation of rooms to assure yourself of accommodations.

HARVARD MEDICAL SOCIETY.—A meeting will be held in the Peter Bent Brigham Hospital amphitheatre (Van Dyke Street entrance), Tuesday evening, March 2, at 8.15 o'clock.

PROGRAM

1. Dr. W. R. Sisson: The Effects of Feeding the Thymus Gland.
2. Dr. W. T. Bovle: Electrons and the Structure of Protoplasm.

Medical students and physicians are cordially invited to attend.

ELLIOTT C. CUTLER, *Secretary*.

NEW ENGLAND PEDIATRIC SOCIETY.—The sixty-second meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, March 12, 1920, at 8.15 P.M.

The following papers will be read:

1. Diabetes in Childhood. Elliott P. Joslin, M.D.
Discussion opened by F. G. Brigham, M.D., and Horace Gray, M.D.
2. Medical Supervision of the Boarded-out Child. Maynard Ladd, M.D.
3. Are the Amounts of the Individual Mineral Elements Usually Fed in Modified Milk Formulas Sufficient? Alfred W. Bosworth and Henry I. Bowditch, M.D.
Discussion opened by W. R. Sisson, M.D.

FRITZ B. TALBOT, M.D., *President*,
LEWIS WEBB HILL, M.D., *Secretary*.

NOTICE.

UNITED STATES CIVIL SERVICE COMMISSION.

The United States Civil Service Commission announces that a large number of physicians are needed for employment in the Indian Service, the Public Health Service, the Coast and Geodetic Survey, and the Panama Canal Service. Both men and women will be admitted to examinations, but appointing officers have the legal right to specify the sex desired when requesting the certification of eligibles.

Entrance salaries as high as \$200 a month are offered, with prospect of promotion in some branches to \$250, \$300, and higher rates for special positions.

Further information and application blanks may be obtained from the Secretary of the U. S. Civil Service Board at Boston, New York, Philadelphia, Atlanta, Cincinnati, Chicago, St. Paul, St. Louis, New Orleans, Seattle or San Francisco, or from the U. S. Civil Service Commission at Washington, D. C.

RECENT DEATHS.

DR. EDWARD D. HALL, died on February 19 at Meriden, Connecticut, at the age of 69 years. Dr. Hall was born on April 1, 1851, at Raynham. He studied medicine at the Harvard Medical School, and also in Berlin and Paris. He practiced in Massachusetts until 1891, and in Meriden for 29 years. Dr. Hall was chief examining physician in Connecticut for the Royal Arcanum. He is survived by his wife and two step-children.

DR. JOSEPH P. MURPHY died of bronchial pneumonia on February 18, at the Peter Bent Brigham Hospital at the age of 58 years. Dr. Murphy was born in Boston, the son of James and Catherine Murphy. He graduated from the Harvard Medical School in 1888 and began practicing in Brookline and Roxbury. He later studied law and graduated from the Boston University Law School, but his practice in the profession was limited to matters of medical jurisprudence. In 1911 Dr. Murphy was appointed assistant chief of the division of child hygiene of the Boston Board of Health. He was a member of the Norfolk County Medical Society and the Massachusetts Medical Society. Dr. Murphy is survived by one brother and one sister.

DR. HARRY J. TATE, of Pittsfield, Massachusetts, died at the House of Mercy on February 11, 1920, at the age of 30 years, of pneumonia, due to overwork and exposure during the influenza epidemic. Dr. Tate graduated from the Georgetown Medical School in 1914. He served for one year as house physician at St. Francis' Hospital, New Jersey, and from 1915 to 1917 he held a similar position at the House of Mercy in Pittsfield. After his return from war service in France he was elected a member of the medical staff of the House of Mercy. On January 5 he was elected city physician. Dr. Tate was a member of the Massachusetts Medical Society and of the Berkshire District Medical Society. He is survived by his mother and by one sister and one brother.

DR. GARDINER M. KINGMAN died recently at his home in West Somerville. He was born in Norton, and had practised dentistry in Boston and Somerville for more than 50 years. He is survived by one son and one daughter.